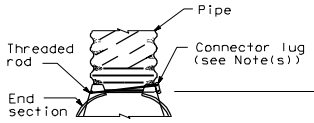
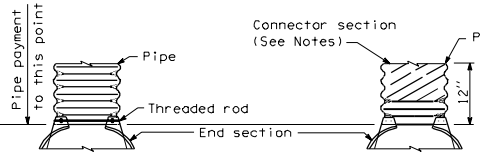


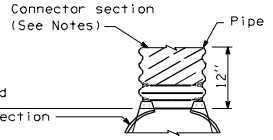
For 12" thru 24" pipe and 17" x 13" thru 28" x 20" pipe arch with annular end corrugations

TYPE 1



For 30" thru 84" pipe and 35" x 24" thru 83" x 57" pipe arch with annular end corrugations

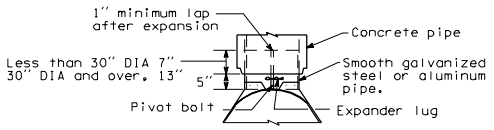
TYPE 2



For 42" thru 84" pipe and 49" x 33" thru 83" x 57" pipe arch with annular end corrugations and all helically end corrugated pipe and pipe arch

TYPE 3

DESIGN A
CONNECTION TO METAL PIPE



DESIGN B
CONNECTION TO CONCRETE PIPE INLET END ONLY

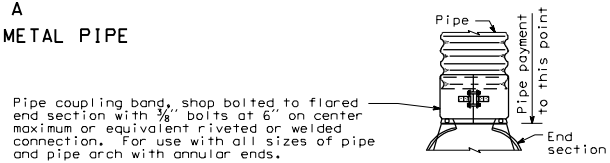
NOTES

1. The diameter of the end section of Design B shall match the inside diameter of the concrete pipe.
2. Skirt sections shall be made in one piece for round pipe with a diameter of 12" to 24" inclusive and for pipe arches with a rise of 13" to 20" inclusive. Skirt sections for larger sizes of pipes may be multiple pieces in conformance with the tabulated values shown.
3. Design A end sections for 42" thru 84" diameter and 49" x 33" thru 83" x 57" arch with annular corrugations and all helically corrugated pipe arch include one foot of pipe length as a connector section. The connector section shall be attached to the end section by welds, rivets or bolts and shall be the same thickness as the end section.
4. Design C may be used in lieu of Design A for all metal pipe sizes except as noted. Coupling bands may be any acceptable type for the pipe specified.
5. Multiple panel skirts shall have lap seams which are to be tightly joined by 3/8" galvanized rivets or bolts.
6. For 60" thru 84" diameter pipe and 77" x 52" and 83" x 57" pipe arch, the reinforced end shall be supplemented with galvanized stiffener angles of the following sizes;

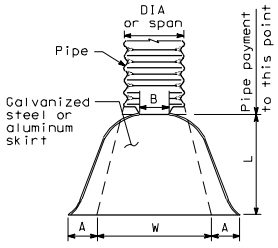
   60" thru 72" diameter pipe
   (2" x 2" x 1/4" galvanized angle)

   77" x 52" and 83" x 57" pipe arch
   78" and 84" diameter pipe
   (2" x 2" x 1/4" galvanized angle)

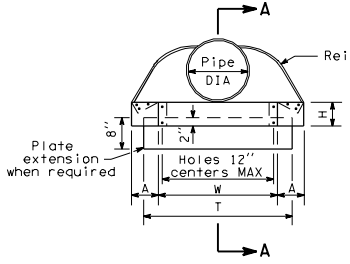
   The above galvanized angles shall be attached by 3/8" galvanized nuts and bolts.
7. Angle reinforcement will be placed under the center panel seams on the 77" x 52" and 83" x 57" pipe arch sizes.
8. As an alternative to the connector lug and threaded rod used on 12" thru 24" culvert pipe, the attachment may be made with a 1" wide strap, 16 gage galvanized steel fastened with a 1/2" diameter, 6" long galvanized bolt and one squarehead nut.



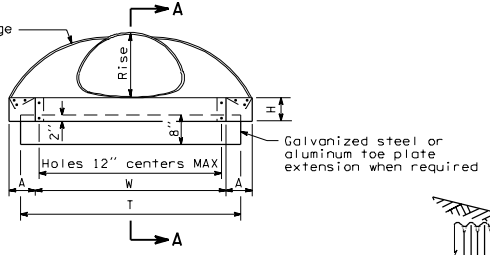
DESIGN C
CONNECTION TO METAL PIPE OR CONCRETE PIPE, OUTLET ONLY



PLAN

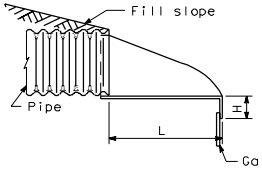


ELEVATION
PIPE



ELEVATION
PIPE ARCH

PIPE AND PIPE ARCH



SECTION A-A
PIPE AND PIPE ARCH

FLARED END SECTIONS

PIPE DIA (Inches)	THICKNESS (Inches)		DIMENSION (Inches) A 1" Toler	B MAX	H 1" Toler	L 1½" Toler	W 2" Toler	T 2" Toler	Skirt	END SECTION SLOPE
	Steel	Alum								
12	0.064	0.060	6	6	6	21	24	34	1 Pc.	2½:1
15	0.064	0.060	7	8	6	26	30	40	1 Pc.	2½:1
18	0.064	0.060	8	10	6	31	36	46	1 Pc.	2½:1
21	0.064	0.060	9	12	6	36	42	52	1 Pc.	2½:1
24	0.064	0.075	10	13	6	41	48	58	1 Pc.	2½:1
30	0.079	0.075	12	16	8	51	60	70	2 Pc.	2½:1
36	0.079	0.105	14	19	9	60	72	94	2 Pc.	2½:1
42	0.109	0.105	16	22	11	69	84	106	2 Pc.	2½:1
48	0.109	0.105	18	27	12	78	90	112	2 Pc.	2½:1
54	0.109	——	18	30	12	84	102	122	2 Pc.	2½:1
60	0.109 / 0.138	——	18	33	12	87	114	134	3 Pc.	1¾:1
66	0.109 / 0.138	——	18	36	12	87	120	142	3 Pc.	1½:1
72	0.109 / 0.138	——	18	39	12	87	126	146	3 Pc.	1⅓:1
78	0.109 / 0.138	——	18	42	12	87	132	152	3 Pc.	1¼:1
84	0.109 / 0.138	——	18	45	12	87	138	158	3 Pc.	1 1/16:1

PIPE ARCH DIMENSIONS (Inches)		THICKNESS (Inches)		DIMENSIONS (Inches) A 1" Toler	B MAX	H 1" Toler	L 1½" Toler	W 2" Toler	T 2" Toler	Skirt	END SECTION SLOPE
Span	Rise	Steel	Alum								
17	13	0.064	0.060	7	9	6	19	30	40	1 Pc.	2½:1
21	15	0.064	0.060	7	10	6	23	36	46	1 Pc.	2½:1
24	18	0.064	0.060	8	12	6	28	42	52	1 Pc.	2½:1
28	20	0.064	0.075	9	14	6	32	48	58	1 Pc.	2½:1
35	24	0.079	0.075	10	16	6	39	60	70	1 Pc.	2½:1
42	29	0.079	0.105	12	18	8	46	75	85	2 Pc.	2½:1
49	33	0.109	0.105	13	21	9	53	85	103	2 Pc.	2½:1
57	38	0.109	0.105	18	26	12	63	90	114	3 Pc.	2½:1
64	43	0.109	0.105	18	30	12	70	102	130	3 Pc.	2½:1
71	47	0.109 / 0.135	0.135	18	33	12	77	114	146	3 Pc.	2½:1
77	52	0.109 / 0.135	——	18	36	12	77	126	152	3 Pc.	1¾:1
83	57	0.109 / 0.135	——	18	39	12	77	138	158	3 Pc.	1½:1